

CLAIMS

1.A method for the treatment of organs subject to erosion by liquids, comprising the application of a cobalt-based alloy on the surface of said organs to form a layer of anti-erosion coating, wherein said alloy comprises:

chromiumfrom 28 to 32% by weight

tungstenfrom 5 to 7% by weight

siliconfrom 0.1 to 2% by weight

carbonfrom 1.2 to 1.7% by weight

nickelfrom 0.5 to 3% by weight

ironfrom 0.01 to 1% by weight;

manganesefrom 0.01 to 1% by weight;

molybdenumfrom 0.2 to 1% by weight

cobaltthe complement to balance.

2.The method according to claim 1, characterized in that said application is effected by means of laser plating (laser cladding).

3.The method according to claim 1 or 2, characterized in that said organs comprise the components of a vapour turbine.

4.The method according to claim 3, characterized in that said components are vapour turbine blades.

5.The method according to claim 2, characterized in that said laser plating is effected with a CO₂ or YAG laser.

6.The method according to any of the previous claims 1-5, characterized in that the layer of coating applied has a thickness ranging from 0.1 to 5 mm.

7.The method according to any of the claims 1-6, characterized in that it also comprises a preliminary heating phase of the surface of the organ to be treated.

8.The method according to any of the claims 1-7, characterized in that it comprises a series of application passages of said alloy.

9.A cobalt-based alloy for the coating of organs subject to erosion by liquids, characterized in that it comprises:

chromiumfrom 28 to 32% by weight

tungstenfrom 5 to 7% by weight

siliconfrom 0.1 to 2% by weight

carbonfrom 1.2 to 1.7% by weight

nickelfrom 0.5 to 3% by weight

ironfrom 0.01 to 1% by weight;

manganesefrom 0.01 to 1% by weight;

molybdenumfrom 0.2 to 1% by weight

cobaltthe complement to 100%.

10.The cobalt-based alloy according to claim 9, characterized in that it has the following composition:

Cr	30 g
W	6 g
Si	1 g
C	1.5 g
Ni	1.5 g
Fe	<0.3 g
Mn	<0.3 g
Co	48 g
Mo	0.75 g
Other (Imp.)	<0.25 g

11. The cobalt-based alloy according to claim 9, characterized in that it has the following composition:

Cr	30 g
W	6 g
Si	1 g
C	1.5 g
Ni	1.5 g
Fe	0.20 g
Mn	0.20 g
Co	Balance
Mo	0.75 g
Other	0.20 g

12.The cobalt-based alloy according to claim 9, characterized in that it has the following composition:

Elem.	Quantity
Cr	28 %
W	5.1 %
Si	0.1 %
C	1.2 %
Ni	0.5 %
Fe	0.01 %
Mn	0.01 %
Mo	0.2 %
Co	Balance
Other (Imp.)	0.01 %

13.The cobalt-based alloy according to claim 9, characterized in that it has the following composition:

Elem.	Quantity
Cr	31.5 %
W	6.5 %
Si	1.8 %
C	1.6 %
Ni	2.8 %
Fe	0.9 %
Mn	0.8 %
Mo	0.9 %
Co	Balance
Other (Imp.)	0.005 %

14.The cobalt-based alloy according to claim 9, characterized in that it has the following composition:

Elem.	Quantity
Cr	30 %
W	6 %
Si	1 %
C	1.5%
Ni	1.8%
Fe	0.5 %
Mn	0.3 %
Mo	0.3 %
Co	Balance
Other (Imp.)	0.05 %

15.An organ or end-product subject to erosion by liquids, characterized in that it comprises a surface coating layer to prevent erosion from liquids based on an alloy according to any of claims 9-14.

The organ or end-product according to claim 15, characterized in that it is a component of a vapour turbine.

17.The organ or end-product according to claim 16, characterized in that said component is a blade of a vapour turbine.

18. The organ or end-product according to any of the claims 15-17, characterized in that said surface coating has a thickness ranging from 0.1 to 5 mm.